

NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE
FLOW RESTRICTOR, ITEM 113B ----- SV778873-15 (1)	2/1R	113BFM03 External gas leakage.  Seal failure.	END ITEM: Oxygen supply leakage to ambient.  GFE INTERFACE: Excessive consumption of the primary oxygen supply. The SOP is automatically activated during EVA if the suit pressure drops to 3.3 psia minimum.  MISSION: Terminate EVA. Loss of use of one EMU.  CREW/VEHICLE: None for single failure. Possible loss of crewman with loss of SOP.  TIME TO EFFECT /ACTIONS: Minutes.  TIME AVAILABLE: Minutes.  TIME REQUIRED: Immediate.  REDUNDANCY SCREENS: A-PASS B-PASS C-PASS	A. Design - Leakage path is through a radial type silicone O-Seal. The seal design configuration, dimensions and rigidness of assembly provide seal squeeze under all load conditions. A backup ring prevents extrusion. Seal is lubricated to prevent damage during assembly.  B. Test - Component Acceptance Test (Vendor) - The manufacturer, CTI, performs an external leakage test to assure seal integrity.  PDA Test - The flow restrictor is leak tested by pressurizing the bottles to 850-950 psia with a mixture of 98% N2 and 2% He. A helium mass spectrometer is then used to "sniff" for evidence of external leakage from the regulator.  Certification Test - Certified for a useful life of 20 years (Ref. EMUM-0083).  C. Inspection - Details, including the O-ring, O-ring grooves and sealing surfaces, are 100% inspected per drawing dimensions and surface finish characteristics. Details are manufactured from material with certified physical and chemical properties.  D. Failure History - None.  E. Ground Turnaround - Tested for EET processing per FEMU-R-001, High Pressure O2 Leakage. None for EET processing.  F. Operational Use - Crew Response - PreEVA: When detected prior to primary O2 tank topoff, trouble-shoot problem, if no success, terminate EVA prep. EMU no go for EVA.  EVA: When CWS data confirms an accelerated O2 use rate, terminate EVA. Training - Standard EMU training covers this failure mode. Operational Considerations - Flight rules define go/no criteria related to EMU suit pressure.

EXTRAVEHICULAR MOBILITY UNIT  
SYSTEMS SAFETY REVIEW PANEL REVIEW  
FOR THE  
I-113 PRIMARY PRESSURE CONTROL MODULE  
CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

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